



SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

AN AUTONOMOUS INSTITUTION



Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Tutorial

Rombergs Method

1. Evaluate $\int_0^1 \frac{dx}{1+x}$ and correct to 3 decimal places using Romberg's method and hence find the value of $\log_e 2$.
2. Evaluate $\int_0^1 \frac{dx}{1+x^2}$ by using Romberg's method correct to 4 decimal places. Hence deduce an approximate value for π .

Double Integrals:

3. Evaluate $\int_0^1 \int_0^1 \frac{1}{1+x+y} dx dy$ by trapezoidal rule.
4. Evaluate $\int_1^2 \int_1^2 \frac{1}{x+y} dx dy$ using T.R and Simpsons's rule. By taking $h=0.25$ and $k=0.25$.
5. Evaluate $\int_1^{1.4} \int_2^{2.4} \frac{1}{xy} dx dy$ using T.R and Simpsons's rule. By taking $h=k=0.1$. Verify your answer with actual integration.